UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,152	12/22/2000	George Beshara Bendak	AMCC4480	2339

7590 08/18/2004

Terrance A. Meador
INCAPLAW
1050 Rosecrana Street
Suite K
San Diego, CA 92106

EXAMINER	
SAM, PHIRIN	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/746,152	BENDAK ET AL.	
	Examiner	Art Unit	
	Phirin Sam	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-94* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7,10-13,15,17,18,24,42-44 and 72* is/are rejected.

7)☒ Claim(s) *4-6,8,9,14,16,19-23,25-41,45-55,57-71 and 73-94* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1 is rejected under 35 U.S.C. 101 because they are directed to non-statutory subject matter.

An invention my be patented only if it falls within one of the four statutory classes of subject matter of 35 U.S.C. § 101 with an exception to the judicially determined subject matter such as laws of nature, mathematical algorithms, scientific principles, physical phenomena, and abstract ideas. Some indirect evidence that congress intended to limit patentable subject matter to physical things and steps is found in 35 U.S.C. § 112, sixth paragraph in the MPEP. The sixth paragraph states that an element in a claim for a combination may be expressed as a "means or step" for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding "structure, material, or acts described in the specification and equivalents thereof." This indicates that a limitation will normally recite "structure, material, or acts." "Structure" and "material" indicate tangible physical things made of matter, not energy. A "In a multidimensional digital frame structure, a method for variably programming the quantity of frame synchronization bytes; and selecting the number of bytes in the overhead section to be used for frame synchronization" does not fit within the type of subject matter that was intended to be patented. If the "In a

multidimensional digital frame structure, a method for variably programming the quantity of frame synchronization bytes; and selecting the number of bytes in the overhead section to be used for frame synchronization" is interpreted as an abstract arrangement "to be" transmitted, rather than a physical signal in transit between a transmitter and receiver, the signal would not fit into any of the four statutory categories because it has no physical existence. Furthermore, it would fit within the judicially recognized exception for "abstract ideas" and is nonstatutory for this additional reason. A physical signal does not fit clearly within one of the three exclusions of "laws of nature, natural phenomena or abstract ideas." The electromagnetic wave or voltage which carries a signal is a form of natural phenomena, but the signal being carried is not naturally occurring. Some subject matter may not fall within the four statutory classes of 35 U.S.C. § 101 or within one of the exceptions. For the reasons stated above, the examiner concludes that "In a multidimensional digital frame structure, a method for variably programming the quantity of frame synchronization bytes, the method comprising: defining an overhead section in a frame structure having a predetermined number of bytes" of claim 1 is not statutory subject matter under 35 U.S.C. § 101 because it is abstract ideas or because it does not fit within any of the statutory classes. It is noted that electrical signals had been around for a long time prior to the 1952 Act as evidenced by claim 8 in O'Reilly v. Morse, 56 U.S. (15 How.) 62 (1854) to the use of electromagnetism for printing intelligible characters at any distances.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 17, 18, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Duch et al (U.S. Patent 5,987,024).

Duch et al discloses the invention (**claim 17**) as claimed including a method for variably programming the quantity of frame sync bytes in the communication of a multidimensional digital frame structure, the method comprising:

(a) selecting the number of frame sync bytes in the overhead section of a transmitted frame (see Fig.

(b) sending the frame (see Fig. 5, elements 76 and 62, col. 4, lines 42-45);

(c) receiving the frame (see Fig. 5, elements 42 and 46, col. 4, lines 40-42);

(d) sync the received frame in response to recognizing frame sync bytes (see Fig. 5, element 48, col. 4, lines 55-59).

Regarding claim 18, Duch et al discloses, for each frame, selecting the number of frame sync bytes required for the recognition of a received frame (see Fig. 5, col. 4, lines 55-67).

Regarding claim 24, Duch et al discloses selecting the bit error rate required for the recognition of the frame sync byte (see Fig. 5, col. 4, line 55-67).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-3, 7, 10, 15, 42-44, 56, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duch et al (U.S. Patent 5,987,024) in view of Suzuki et al (U.S. Patent 6,522,665).

Regarding claims 1-3, 7, 10-13, and 15, Duch et al discloses, in a multidimensional digital frame structure, a method for variably programming the quantity of frame synchronization bytes, the method comprising:

(a) defining an overhead section in a frame structure having a predetermined number of bytes (see Figs. 2 and 5, col. col. 3, lines 32-35, col. 5, lines 45-48).

Duch et al does not disclose selecting the number of bytes in the overhead section to be used for frame sync. However, Suzuki et al discloses selecting the number of bytes in the overhead section to be used for frame sync (see col. 23, lines 5-25). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the selection of the

number of bytes in the overhead section to be used for frame sync teaching by Suzuki et al with Duch et al. The motivation for doing so would have been to provide to reduce the frame sync error rate in the first frame sync. Therefore, it would have been obvious to combine Suzuki et al and Duch et al to obtain the invention as specified in the claim(s) 1-3, 7, 10-13, and 15.

Regarding claims 42-44, Duch et al discloses, in a multidimensional digital frame structure, a transmitter system for variably programming the number of frame synchronization bytes, the system comprising:

(a) a frame generator including an overhead generator to generate the overhead section of a frame (see Fig. 5, element 66, col. 5, lines 16-18), a payload generator to generate the payload section of the frame (see Fig. 5, element 69, col. 5, line 18), and an encoder to provide forward error correction (FEC) for the frame (see Fig. 5, element 70, col. 5, line 21).

Duch et al does not disclose an input to select the quantity of frame synchronization bytes in the overhead section. However, Suzuki et al discloses the input to select the quantity of frame synchronization bytes in the overhead section (see col. 23, lines 5-25). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the input to select the quantity of frame sync bytes in the overhead section teaching by Suzuki et al with Duch et al. The motivation for doing so would have been to provide to reduce the frame sync error rate in the first frame sync. Therefore, it would have been obvious to combine Suzuki et al and Duch et all to obtain the invention as specified in the claims 42-44.

Regarding claim 56, Duch et al discloses, in a multidimensional digital frame structure, a receiver system for variably programming the number of frame synchronization bytes, the system comprising:

(a) a frame receiver including an overhead receiver to receive the overhead section of a frame, a payload receiver to receive the payload section of the frame, and a decoder to provide a forward error corrected (FEC) frame (see Fig. 5, element 46, 50, 54, col. 4, lines 51-52, 58-60).

Duch et al does not disclose the overhead receiver includes an input to select the quantity of frame sync bytes in the overhead section to be used for frame sync. However, Suzuki et al discloses the overhead receiver includes an input to select the quantity of frame sync bytes in the overhead section to be used for frame sync (see col. 23, lines 5-25). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the overhead receiver includes an input to select the quantity of frame sync bytes in the overhead section to be used for frame sync teaching by Suzuki et al with Duch et al. The motivation for doing so would have been to provide to reduce the frame sync error rate in the first frame sync. Therefore, it would have been obvious to combine Suzuki et al and Duch et al to obtain the invention as specified in the claim 56.

Regarding claim 72, Duch et al discloses a system for variably programming the quantity of frame sync bytes in the communication of a multidimensional digital frame structure, the system comprising:

(a) a transmitter with a frame generator including an overhead generator (see Fig. 5, elements 62, 66, col. 5, lines 13-21).

(b) a receiver with a frame receiver including an overhead receiver, the overhead receiver synchronizing the frame in response to recognizing the frame sync bytes (see Fig. 5, elements 46, 50, col. 4, lines 51-67).

Duch et al does not disclose an input to select the quantity of frame synchronization bytes in the overhead section. However, Suzuki et al discloses the input to select the quantity of frame synchronization bytes in the overhead section (see col. 23, lines 5-25). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the input to select the quantity of frame sync bytes in the overhead section teaching by Suzuki et al with Duch et al. The motivation for doing so would have been to provide to reduce the frame sync error rate in the first frame sync. Therefore, it would have been obvious to combine Suzuki et al and Duch et al to obtain the invention as specified in the claim 72.

Allowable Subject Matter

8. Claims 4-6, 8, 9, 14, 16, 19-23, 25-41, 45-55, 57-71, and 73-94 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Phirin Sam whose telephone number is (703) 308 - 9294. The Examiner can normally be reached on Monday - Friday from 8:30AM - 4:00PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Douglas W. Olms can be reached at (703) 305 - 4703. The fax number for the organization where this application or proceeding is assigned is (703) 872 - 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217 - 9197 (toll-free).

Respectfully submitted,

Date: August 16, 2004

Phirin Sam
Patent Primary Examiner